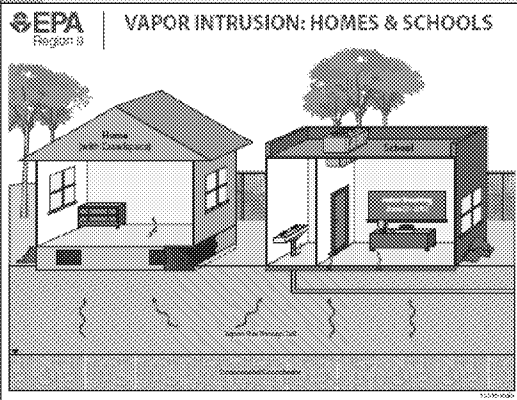


Triple Site EPA Perspective & Path Forward

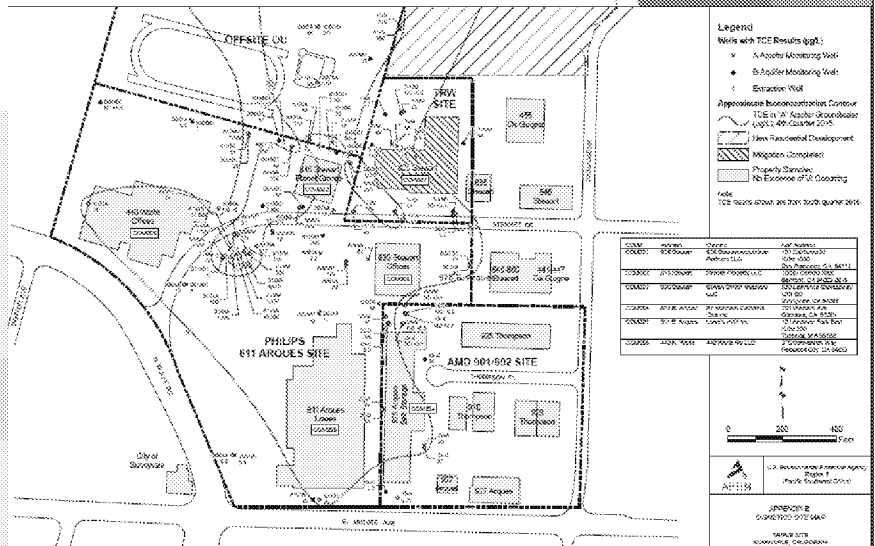


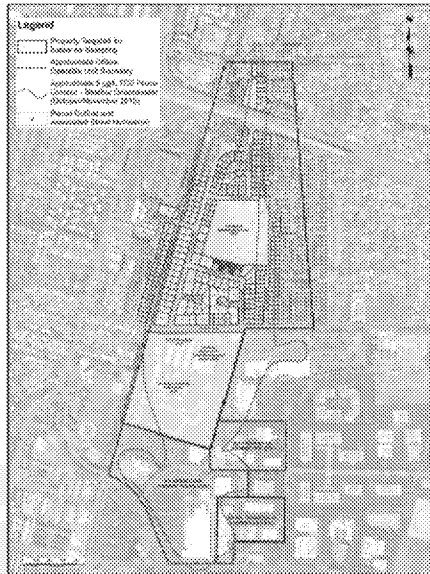
Philips/Signetics,
AMD 901/902 Thompson Place, and
TRW Microwave Superfund Sites
Sunnyvale, California
May 2018
EPA Region 9

Source Site Overviews

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- ▶ AMD 901/902
 - ▶ Commercial VI & FFS completed
 - ▶ Report submitted to EPA and undergoing review
- ▶ TRW Microwave
 - ▶ Commercial VI completed & mitigation system installed
 - ▶ FFS process underway
- ▶ Signetics/Philips
 - ▶ FFS process beginning
 - ▶ Commercial VI not yet begun





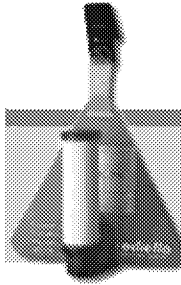
Offsite OU Overview

- ▶ Ongoing VI investigation in residential/school neighborhood
- ▶ More than 275 residences & school buildings sampled to date
- ▶ 27 buildings undergoing mitigation or further assessment to respond to TCE above short-term screening level
 - ▶ 15 residential buildings with 80 residences
 - ▶ 12 school buildings with 3,000 children & staff

HOME ACTIVITY GUIDELINES

The air sampler called Radonite is pictured below. It is an unpowered, passive collection device, requires no power source, and therefore makes no noise. It simply slowly pulls in the air from the environment where it is placed. We hope to place 1 to 2 sample units per home. The sampler units can be placed outside, as well.

The air sampling program involves very sensitive tests, which can be affected by certain home activities. Please follow these home activity guidelines at least 48 hours prior to and during the sampling.



DO NOT:

- Touch the sampler
- Use paints or varnishes
- Practice indoor hobbies that use solvents or glues
- Apply pesticides
- Use nail polish or nail polish remover in the same room as the sampler
- Smoke in the house during sampling, if possible
- Spray air fresheners, use furniture polish, or light candles or incense near the air sampler
- Use fireplace during sampling

(Please try to keep exterior doors and windows closed) as much as possible during the sampling. We realize these guidelines may restrict your household activities while sampling is underway. However, they will help us obtain accurate results.

THANK YOU! -Melanie Menash (415) 572-3032

Sample Pickup Date: _____ Time: _____

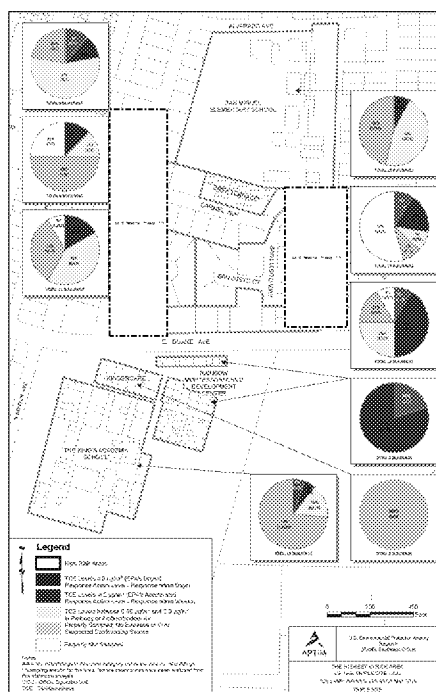


Offsite OU Overview

- ▶ Ongoing O&M of mitigation systems
- ▶ Continued rounds of sampling at certain buildings to verify that TCE levels remain protective
- ▶ Continued access efforts to sample and/or mitigate buildings at high risk of VI
- ▶ Evaluating results of Jan-Feb 2018 supplemental school sampling
 - ▶ Two school buildings with TCE above short-term level
 - ▶ 5-10 school buildings potential candidates for preemptive mitigation

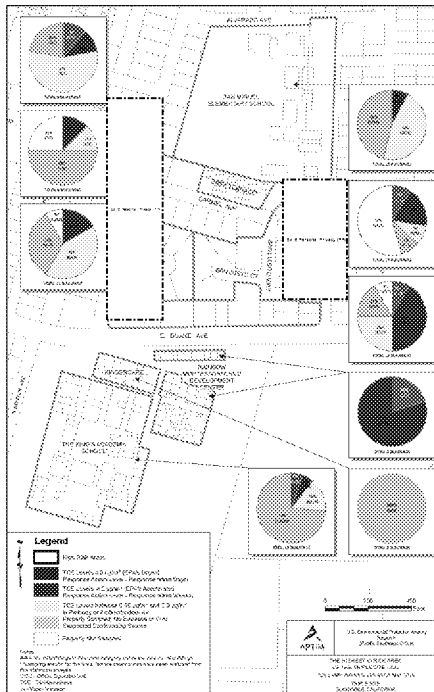
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- How can we wrap up the majority of the residential VI work within the next year?



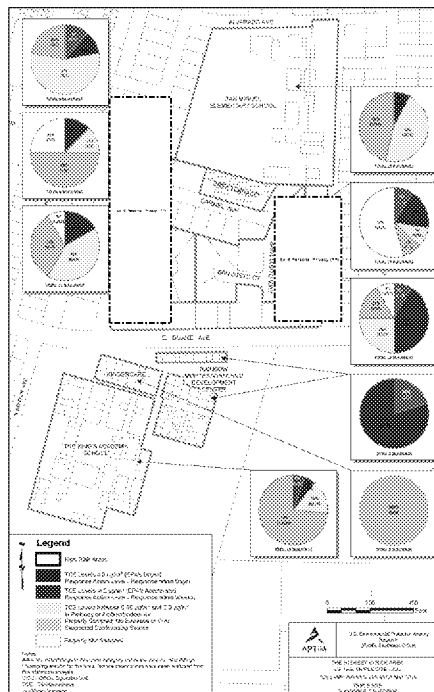
Offsite OU Path Forward

- ▶ Current sampling approach reveals increasingly more buildings affected by VI with each passing year
- ▶ Outreach efforts are time and resource intensive
- ▶ Difficult to project timeframe for completion
- ▶ Reasonable to expect that with no change to current project implementation, outreach and sampling efforts would need to continue indefinitely



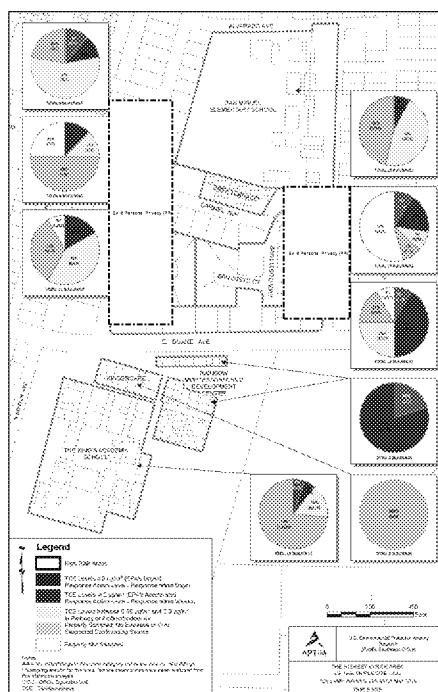
Offsite OU
Path Forward

- ▶ Consistent with national EPA guidance, EPA recommends approach of preemptive mitigation in the known high-risk area in the Offsite OU
- ▶ Would facilitate substantive project completion within one year
- ▶ Would allow team to move past the VI and focus on overall source reduction and remedy change
- ▶ Abundance of sampling data confirms elevated VI risk



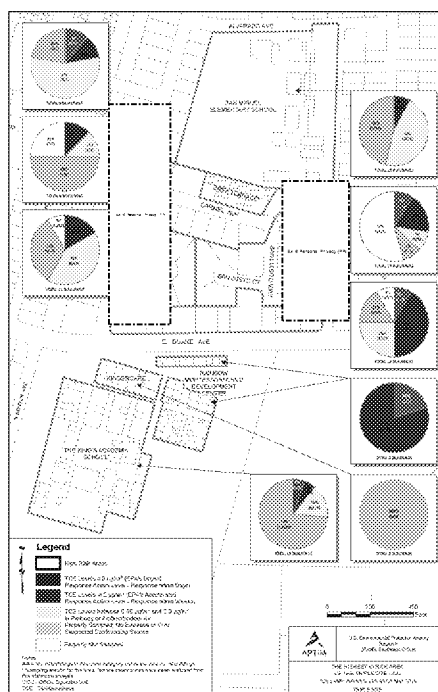
Offsite OU
Path Forward

- ▶ Expand project team with additional staff
- ▶ Temporary outlay of additional resources but cost-effective in the long term by avoiding back-and-forth sampling indefinitely
- ▶ Mitigates residents' anxieties and concerns during prolonged study periods

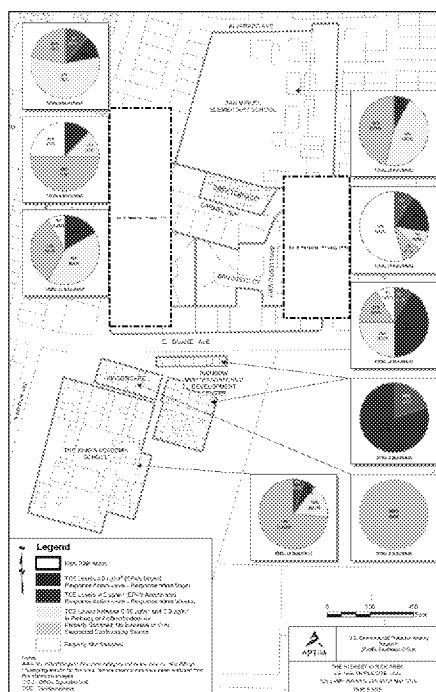


Offsite OU
Path Forward

- Similar to approach thus far, develop generic template for preemptive mitigation offer to property owners
- Meet with owners and tenants
- Obtain written access agreements
- Develop and implement building-specific mitigation plans



- ▶ In parallel with VI investigation in schools, transition to long-term O&M activities
- ▶ Implement post-removal site controls
 - ▶ Record mitigation packages
 - ▶ Deed notices
 - ▶ Property transfer tracking system



Looking ahead...

- ▶ Focus on source reduction to substantially reduce the risk of VI to the surrounding community
- ▶ Source Site FFS work ultimately leading to an EPA decision document for the three sites & Offsite OU, covering the VI pathway and revised groundwater remedy

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United States Environmental Protection Agency /
Agencia de Protección Ambiental de los Estados Unidos

The Triple Site / Sitio Triple Site

You're
invited!

Thursday
May 14th, 2015
6:30 - 8:00 p.m.

¡Estás
invitado!

Jueves
14 de mayo, 2015
6:30 - 8:00 p.m.

San Miguel Elementary School
Mulhargrove Road
777 San Miguel Avenue
San Jose, CA 95126

¡Habrá interpretación en español!

EPA Contact:
Miguel Marquez
(415) 972-3838
marquez.miguel@epa.gov

Contacto de EPA:
Miguel Márquez
(415) 972-3838
miguelmarquez@epa.gov

Come to the 2nd Triple Site Community Meeting /
Venga a la 2^{da} Reunión Comunitaria del Sitio Triple Site

We'll share the results from the first round of neighborhood indoor air testing and explain our next steps. / Compartiremos los resultados de la primera ronda del muestreo del aire interior en la comunidad y explicaremos nuestros próximos pasos.

Time	Topic	Time	Topic
6:30	Sign in, Potluck Session	6:30	Registro, Sesión de Comida
7:15	Welcome & Introduction - Ranque Alvarado, EPA Division Director	7:15	Bienvenida e Introducción - Ranque Alvarado, División del Programa Regional
7:30	Indoor Air Sampling Update - Melanie Alvarado, EPA Project Manager	7:30	Actualización del Muestreo del Aire Interior - Melanie Alvarado, Gerente del Proyecto de la EPA
7:45	Open House/Questions & Answers	7:45	Preguntas/Respuestas y Preguntas
8:00	Meeting Adjourns	8:00	Cierre de Sesión

Website / Sitio Web: www.epa.gov/región8/triplesite

- ▶ State Orders to enforce 1991 ROD
- ▶ Signetics Site
 - ▶ Proposed ASAOC for FFS & Commercial VI Removal Action
- ▶ TRW Site
 - ▶ AOC in place for cost recovery

 EPA School Sampling Update

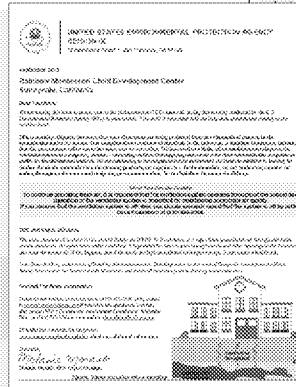
The U.S. Environmental Protection Agency (EPA) has been investigating the potential for vapor intrusion in private homes where vapors from groundwater contamination may migrate into the indoor air of schools and residences in the Duaneburg Mixed-Use Neighborhood. Indoor air sampling has been conducted every year at seven school buildings, and all tested results continue to meet EPA's requirements for protecting children's health. However, EPA recently strengthened its protective levels for children's homes (TCL) and has

ed Vapor Intrusion

is the groundwater due to historical actions
for electronic manufacturing operations from
Jefferson Valley (dating back to the 1960s).
It, the company is responsible for the environ-
ment have been conducting activities to contain
EPC in the shallow groundwater.

This past year EPA strengthened its protection level for the TCE, due to new information about potential cancer risks related to TCE exposure. New levels that would amount to an accelerated EPA response were also developed for short-term risks, including liver and kidney effects and organ problems in babies whose mothers were exposed during the first trimester of pregnancy.

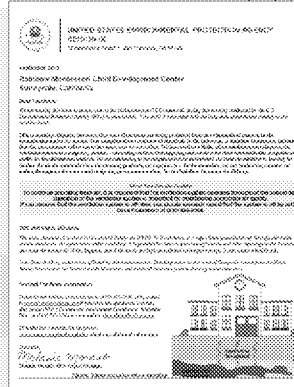
EPA has feared acute toxic liver organ-tumors can vary throughout the year. This is why EPA is planning to sample or check soil residues this fall and winter to confirm the die new, lower levels for PCB exposure are not being exceeded.



Enforcement Instruments

► Offsite OU

- Need for updated ASAOC for Residential/School VI Removal Action
- New SOW, building upon previous work
 - FFS Work Plan for VI
 - Review of current site data
 - Evaluation of prefer path's
 - RAOs and Remedial Alter's
 - Removal Action Work Plan for VI



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EPA School Sampling Update

Page 10, San Diego, California

The U.S. Environmental Protection Agency (EPA) has been investigating the potential for vapor intrusion to present where vapors from groundwater contamination may migrate into the indoor air of schools and residences in the Chandler Regional Water Treatment Plant (CRWTP) area. Indoor air sampling has been conducted every year at some school buildings, and all school results continue to meet EPA's requirements for protecting children's health. However, EPA recently strengthened its protective levels for trichloroethylene (TCE) and has

a more comprehensive testing approach. While we don't expect levels of concern, EPA will do more air sampling at schools and in this neighborhood this fall and winter to make sure that the risk for TCE is not being overstated.

Vapor Intrusion

One of the most common types of contamination in the U.S. is a type of volatile organic chemical (VOC) that can enter a home from groundwater through soil conditions. If vapors move under a building to get to the ground, they can enter the indoor air. If the levels of VOCs are high enough and long, it may cause a health risk.

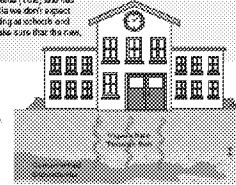


Figure 1: Vapor intrusion into a building

is in the groundwater due to historical releases from electronics manufacturing operations from the 1960s to the 1990s. In the area, the responsible for the releases have been conducting activities to contain TCE in the shallow groundwater.

What Has Already Been Done?

Sampling has already been conducted at the CRWTP and in the surrounding area. The highest concentrations of TCE were found in the CRWTP area. The CRWTP is currently conducting activities to contain TCE in the shallow groundwater.

Why Sample Again?

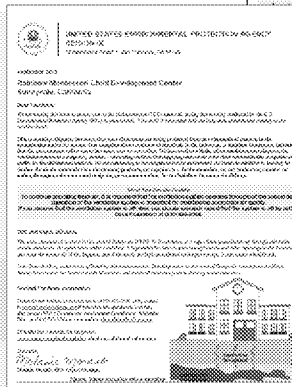
The past year EPA strengthened its protective levels for TCE, due to new information about potential cancer risks related to TCE exposure. New levels that would warrant an action level EPA response were also developed for schools, including limits and testing effort and vapor problems in schools where students were exposed during the last release of TCE.

EPA has learned more about how vapor intrusion can vary throughout the year. This is why EPA is planning to sample at schools and residences this fall and winter to confirm the data, lower levels for TCE exposure are not being exceeded.

Note: Your drinking water is not affected by this contamination. Neighborhood drinking water comes from the Hatch Family Reservoir in the Santa Monica Mountains and made of state and federal drinking water standards.

Remedy Change

- Remedy change may include:
 - VI Assessment & Mitigation Toolbox
 - Continued pump-and-treat
 - In-situ remedies
 - Monitored natural attenuation
 - Updated Institutional Controls



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EPA School Sampling Update

Page 101, San Diego, California

The U.S. Environmental Protection Agency (EPA) has been investigating the potential for vapor intrusion to present where vapors from groundwater contamination may migrate into the indoor air of schools and residences in the Chatsworth High School Neighborhood. Indoor air sampling has been conducted every year at some school buildings, and all school results continue to meet EPA's requirements for protecting children's health. However, EPA recently strengthened its protective levels for trichloroethylene (TCE) and has

more comprehensive testing approach. While we don't expect levels of concern, EPA will do more air sampling at schools and in this neighborhood this fall and winter to make sure that the risk for TCE is not being overstated.

Vapor Intrusion

One of the most common types of contamination in the U.S. is a type of volatile organic chemical (VOC) called trichloroethylene (TCE). TCE can enter a home from groundwater through soil conditions. If vapors move under a building to get to the ground, they can enter the building and enter the indoor air. If the level of TCE is high enough and long, it may cause a health risk.

In the groundwater due to historical operations for electronic manufacturing operations from the 1950s to the 1980s, the company is responsible for the contamination. EPA has been conducting studies to assess TCE in the shallow groundwater.

What's Already Been Done?

Sampling has already been conducted at the school buildings in Chatsworth because there were higher concentrations in groundwater. The testing, done this time, is very low, and is to protect children's health. The goal now is to see how much TCE is in the groundwater and how much TCE is in the air.

Note: Your drinking water is not affected by this contamination. Neighbors and drinking water comes from the Hatch-Hendry Reservoir in the Santa Monica Mountains and made of state and federal drinking water standards.

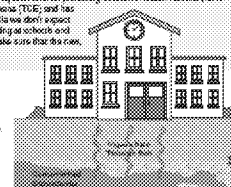
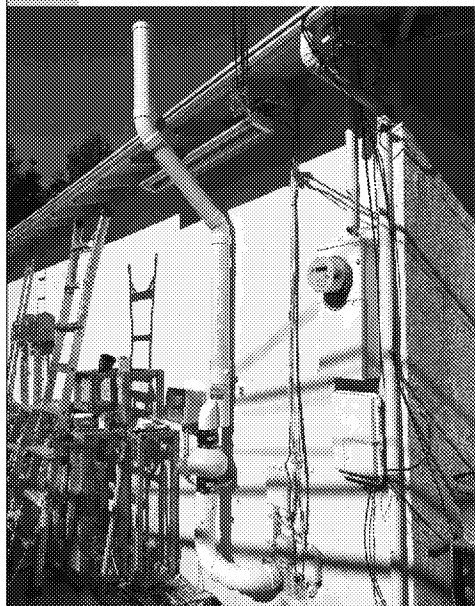


Figure 1: Vapor intrusion into a building

Why Sample Again?

The past year EPA strengthened its protective levels for TCE, due to new information about potential cancer risks related to TCE exposure. New levels that would warrant an action level EPA response were also developed for schools, including limits and testing effort and vapor problems in schools where students were exposed during the last summer of pregnancy.

EPA has learned more about how vapor intrusion can vary throughout the year. This is why EPA is planning to sample at school and residential sites and wants to confirm the data new, lower levels for TCE exposure are not being exceeded.



Open
Discussion...